

What is claimed is:

1. A medical device suitable for use with magnetic resonance imaging, the medical device comprising:

a polymeric component configured for attaining a diagnostic or therapeutic goal; and

a microcapsule additive disposed within at least a portion of the polymeric component, the microcapsule additive comprising a fluid impermeable shell component containing an MRI contrast-enhancing fluid.

2. The medical device of claim 1 wherein the polymeric component comprises a device body having a working end, the working end configured for performing a diagnostic or therapeutic procedure.

3. The medical device of claim 2 wherein the medical device is an interventional medical device and the device body comprises an elongated tubular body.

4. The medical device of claim 1, wherein the MRI contrast-enhancing fluid renders the portion of polymeric component directly visible during magnetic resonance imaging.

5. The medical device of claim 1, wherein the polymeric component comprises a contrast agent.

6. The medical device of claim 1, wherein the polymeric component comprises a coating.

7. The medical device of claim 1, wherein the MRI contrast-enhancing fluid exhibits a high density of free protons with clinically useful relaxation properties.

8. The medical device of claim 7, wherein the MRI contrast-enhancing fluid comprises a lipid or oil.

9. The medical device of claim 8, wherein the MRI contrast-enhancing fluid is selected from the group consisting of: mineral oil, cod liver oil, terpene and polyunsaturated fatty acids.

10. The medical device of claim 1, wherein the microcapsule additive is formed by coacervation.

11. The medical device of claim 1, wherein the microcapsule additive is formed by vapor phase deposition, fluid bed coating, entrapment/matrix encapsulation, macroemulsion, dispersion polymerization, interfacial polymerization, solvent phase separation, liposomal encapsulation or alginate encapsulation.

12. The medical device of claim 1, wherein the microcapsule additive is formed by spray coating, pan coating, fluid bed coating, annular jet, spinning disk, spray cooling, spray drying or spray chilling.

13. The medical device of claim 1, wherein the fluid impermeable shell component of the microcapsule additive is chemically compatible with the polymeric component.

14. The medical device of claim 1, wherein the polymeric component is selected from the group consisting of polyurethane, polyethylene, silicon rubber and polyethylene terephthalate.

15. The medical device of claim 1, wherein the MRI contrast-enhancing fluid further comprises relaxation modifying agents.

16. The medical device of claim 15, wherein the relaxation modifying agents are selected from the group consisting of iron oxide particles and anchored gadolinium-based T1 reducing agents.

17. An interventional device having enhanced visibility during magnetic resonance imaging, the interventional device comprising:

a device body comprising a polymeric matrix and having proximal and distal ends and a distal end region; and

a microcapsule additive disposed within the polymeric matrix in at least a portion of the distal end region, the microcapsule additive comprising an MRI contrast-enhancing fluid.

18. The interventional device of claim 17, wherein the MRI contrast-enhancing fluid comprises a lipid or oil.

19. The interventional device of claim 18, wherein the microcapsule additive further comprises a fluid impermeable shell component that is chemically compatible with the polymeric matrix.

20. The interventional device of claim 17, wherein the MRI contrast-enhancing fluid further comprises a relaxation modifying agent.

21. The interventional device of claim 17, wherein the interventional device is formed by extrusion of a mixture of the polymeric material and the microcapsule additive.

22. The interventional device of claim 17, wherein the interventional device is formed by coating the polymeric material onto the device body.